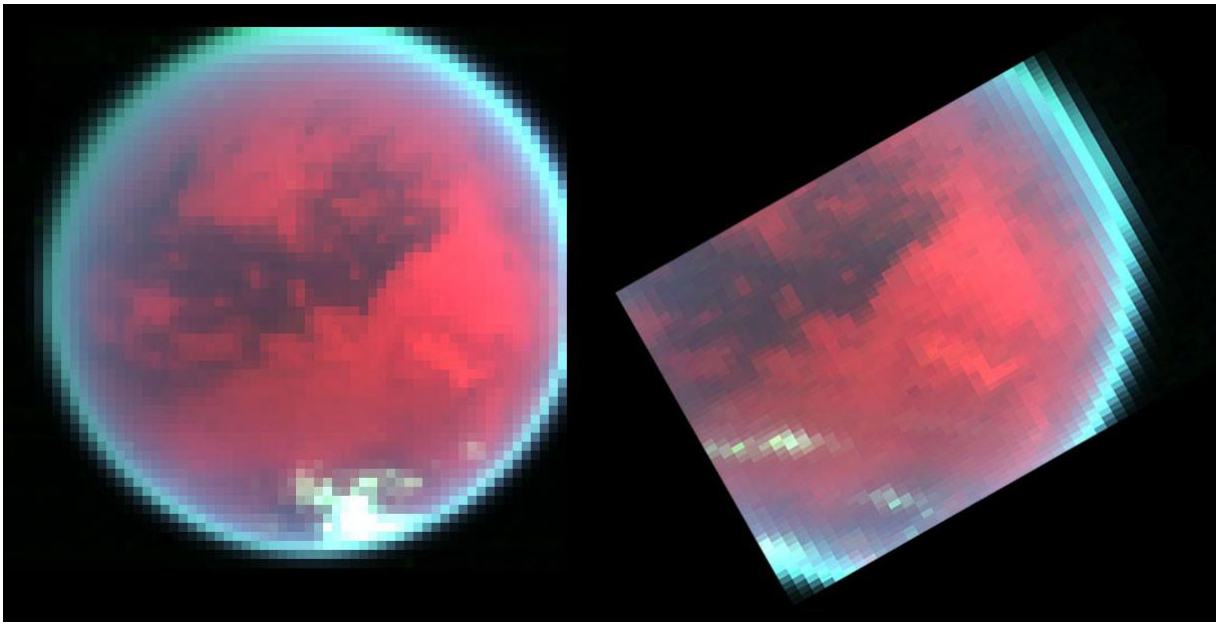
C A S S I N I



T I T A N - 1 1
MISSION DESCRIPTION

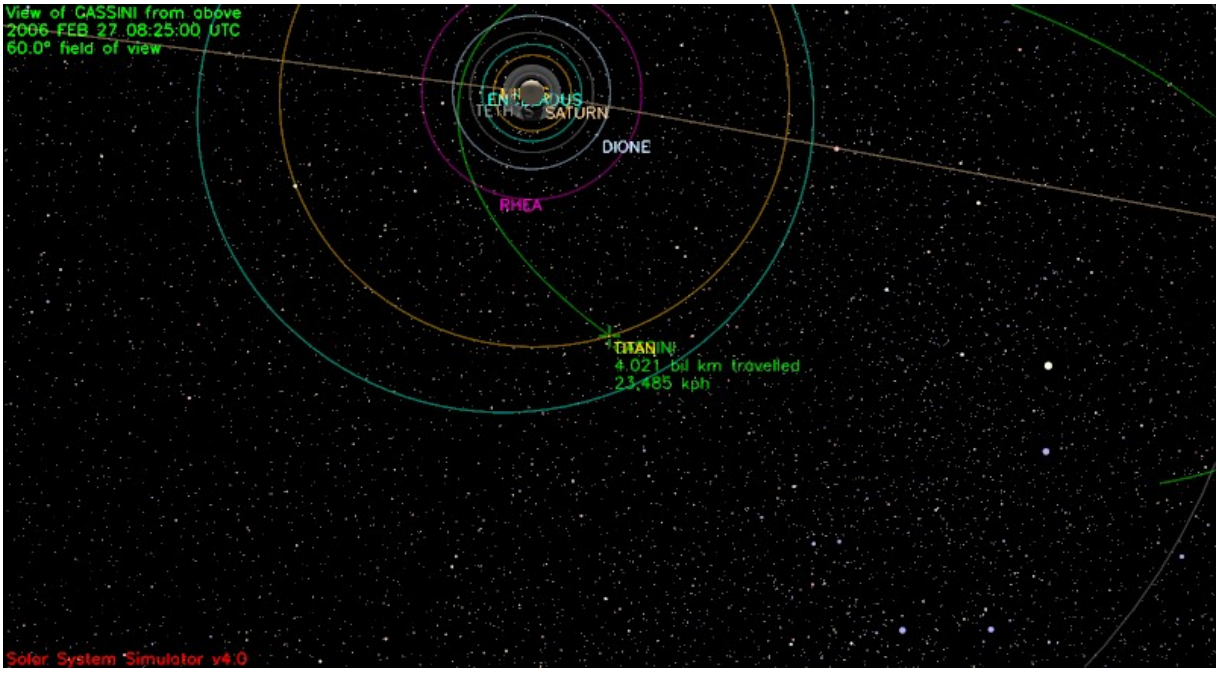
February 2006

Jet Propulsion Laboratory
California Institute of Technology

1.0 OVERVIEW

Forthy-three days after T10, Cassini returns to Titan for the twelth targeted flyby of Titan on Monday, February 27, 2006 at 2006-058T08:25:19 Ground UTC and 02:48am PST.

Cassini's closest approach to Saturn's largest satellite is at an altitude of 1813 km (1126 miles) above the surface at a speed of 6.0 kilometers per second (13,200 mph).



This encounter is set up with two maneuvers: an apoapsis maneuver scheduled for February 5th, and a Titan approach maneuver, scheduled for February 23rd. Titan-11 is an outbound flyby, with Saturn periapsis occurring about two before closest-approach, on February 25th. The Navigation team expects to deliver the orbiter to within 30 km of the target altitude at a confidence of 99% (three sigma).

Titan-11 is Cassini's twelth targeted satellite encounter. The first was Phoebe, on June 11 th, at an altitude of 2000 km. The second was Titan A, on October 26th, at an altitude of 1200 km and the third was Titan-B, on December 13th at an altitude of 1200 km. The remaining flybys T3 through T10 are described in their corresponding Mission Descriptions.

1.1 ABOUT TITAN

Titan is one of the primary scientific interests of the Cassini-Huygens mission. Through observations by Earth based telescopes and the Voyager spacecraft, Titan has been revealed to be an intriguing world both similar in nature to Earth and unique among both satellites and terrestrial planets. The largest of Saturn's satellites, Titan is larger than the planets Mercury or Pluto. Titan is the only satellite in the solar system with an appreciable atmosphere. Like Earth's atmosphere, Titan's atmosphere is composed mostly of Nitrogen, yet appears to have few clouds. However, it also contains significant quantities of aerosols and organic compounds (hydrocarbons), including methane and ethane. Although Titan's thick smoggy atmosphere masks its surface, scientists have speculated Titan's surface could contain solid, liquid and muddy material creating features such as lakes, seas, or rivers. Additionally liquid reservoirs may exist beneath the surface forming geysers or volcanoes that feed flowing liquid onto the surface.

Titan's peak surface temperature is about 95 Kelvin, too cold for liquid water, and due to its thick atmosphere, the pressure at the surface is 1.6 times greater than Earth's atmosphere. At this temperature and pressure, chemicals such as methane, ethane, propane, ammonia, water-ice and acetylene may be involved in complex interior-surface-atmosphere chemical cycles resulting in eruptions, condensation and precipitation (or rain). Initial observations obtained by Cassini during the first several passes of Titan provided our first close up views of Titan in wavelengths ranging from visible light to infrared to radar. The Huygens probe successfully returned atmospheric data and images of the surface, providing ground truth for the Cassini Orbiter measurements. The results show a mysterious world even more complex than previously thought. The diversity of surface composition and its connection to Titan's geologic features remains a fundamental question. Huygens' results indicate that methane exits as a liquid just below the surface and may rain from the atmosphere periodically. Clouds in Titan's atmosphere were observed in the southern hemisphere, yet no clear explanation has emerged on what the clouds are composed of, or why more clouds do not exist. Observations of Titan's interaction with Saturn's magnetosphere indicate the presence of complex processes complicated by Titan's occasional emergence out of Saturn's magnetosphere into the solar wind

1.2 TITAN-11 SCIENCE ACTIVITIES

Imaging Science Subsystem (ISS) – will perform a global-scale mosaic of the sub-Saturnian hemisphere: covering the equatorial region from Fensal/Quivira/Aztlan to Aaru, and Tsegihi in the south. ISS also has a mosaic that ranges from the regional scale to high resolution and includes the southern part of Aztlan, the eastern part of Shiwanni Virgae, and Elba Facula. The closer mosaic will have pixel scales ~600-350 m.

Composite Infrared Spectrometer (CIRS) –will obtain information on trace constituents in Titan's stratosphere. Integrate on limb at two positions POINTING: Obtain information on CO, HCN, CH4. Integrate on disk at airmass 1.5-2.0. POINTING: -y to Titan, x away from sun..

Ultraviolet Imaging Spectrometer (UVIS) – will perform a global spectral map to study aerosol scattering and hydrocarbon absorption and distribution. This will also be UVIS' first solar occultation. With the solar occultation UVIS can observe the extreme ultraviolet (EUV) spectrum below 110 nm and can sample opacity from nitrogen and methane and possibly some other hydrocarbons.

Visible and Infrared Mapping Spectrometer (VIMS) – will obtain new high resolution images that will help understand Titan's geology and the fate of CH4.

Magnetometer (MAG) - will take advantage of this encounter being upstream of the Titan/magnetospheric interaction. The spacecraft will fly through Titan's middle ionosphere. Together with the T8 and T6 flybys, T11 will allow MAG to reconstruct the upstream equatorial ionospheric pile-up region.

Magnetospheric Imaging Instrument (MIMI) – will investigate micro-scale and near aspects of the Titan interaction by observing during about one hour period around an encounter. With -Y pointed toward Titan, when within 30 minutes of the targeted flyby, optimize secondary axis for co-rotation flow as close to the S/C -X, +/- Z plane as works with the other constraints on pointing. Also, measure Titan exosphere/magnetosphere interaction by imaging in ENA with INCA (when sun is not in INCA FOV).

Ion and Neutral Mass Spectrometer (INMS) – will obtain data regarding Titan's atmospheric and ionospheric composition and thermal structure. INMS will also observe the magnetospheric/ionospheric interaction.

Radio and Plasma Wave Spectrometer (RPWS) – will study the interaction of the magnetosphere with Titan at intermediate distances for evidence of ion pickup, radio emissions, density profiles, and the general wave environment.

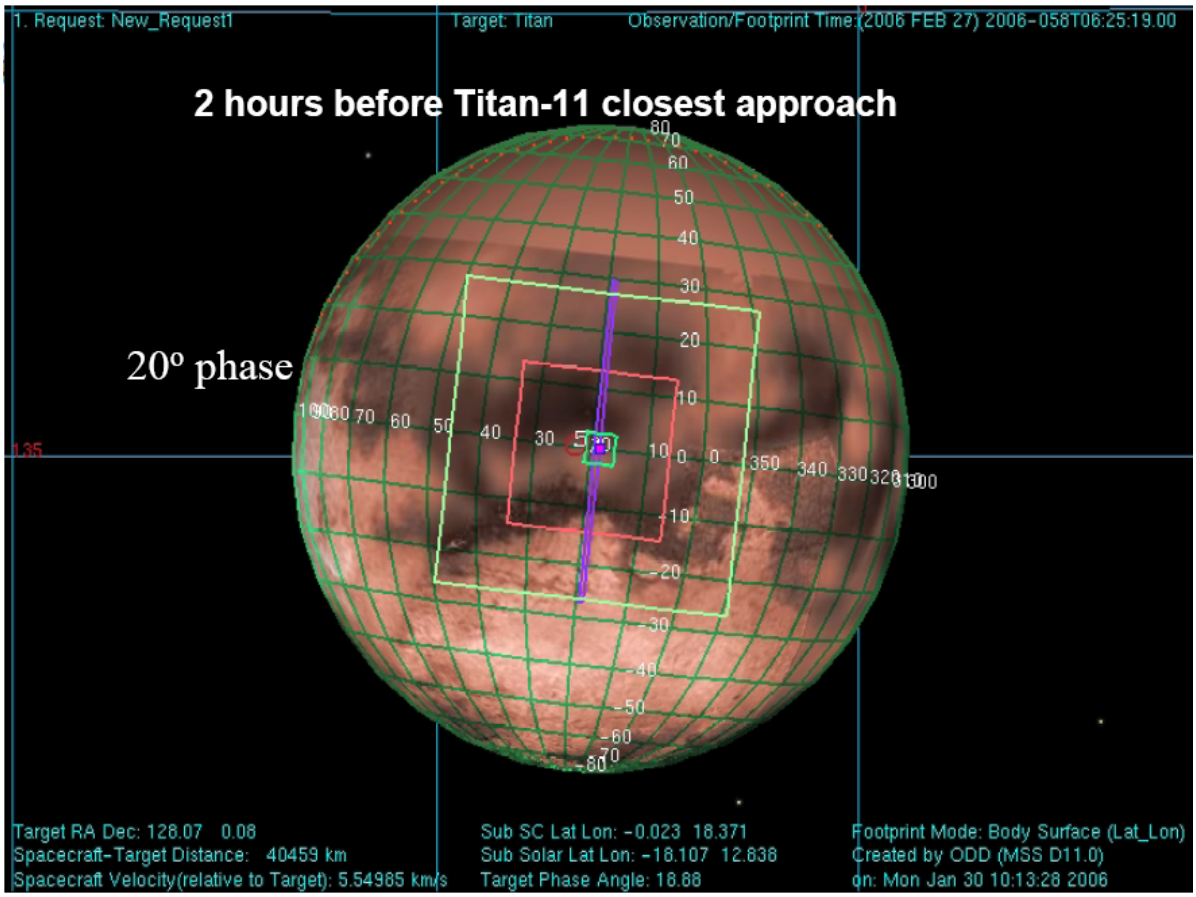
Radio Science (RSS) – will perform two Gravity Science Enhancement (GSE) passes occurring after the flyby in order to answer the question of whether Titan possesses an internal ocean. The GSE passes are crucial to de-correlate Titan's GM from the distance at closest approach.

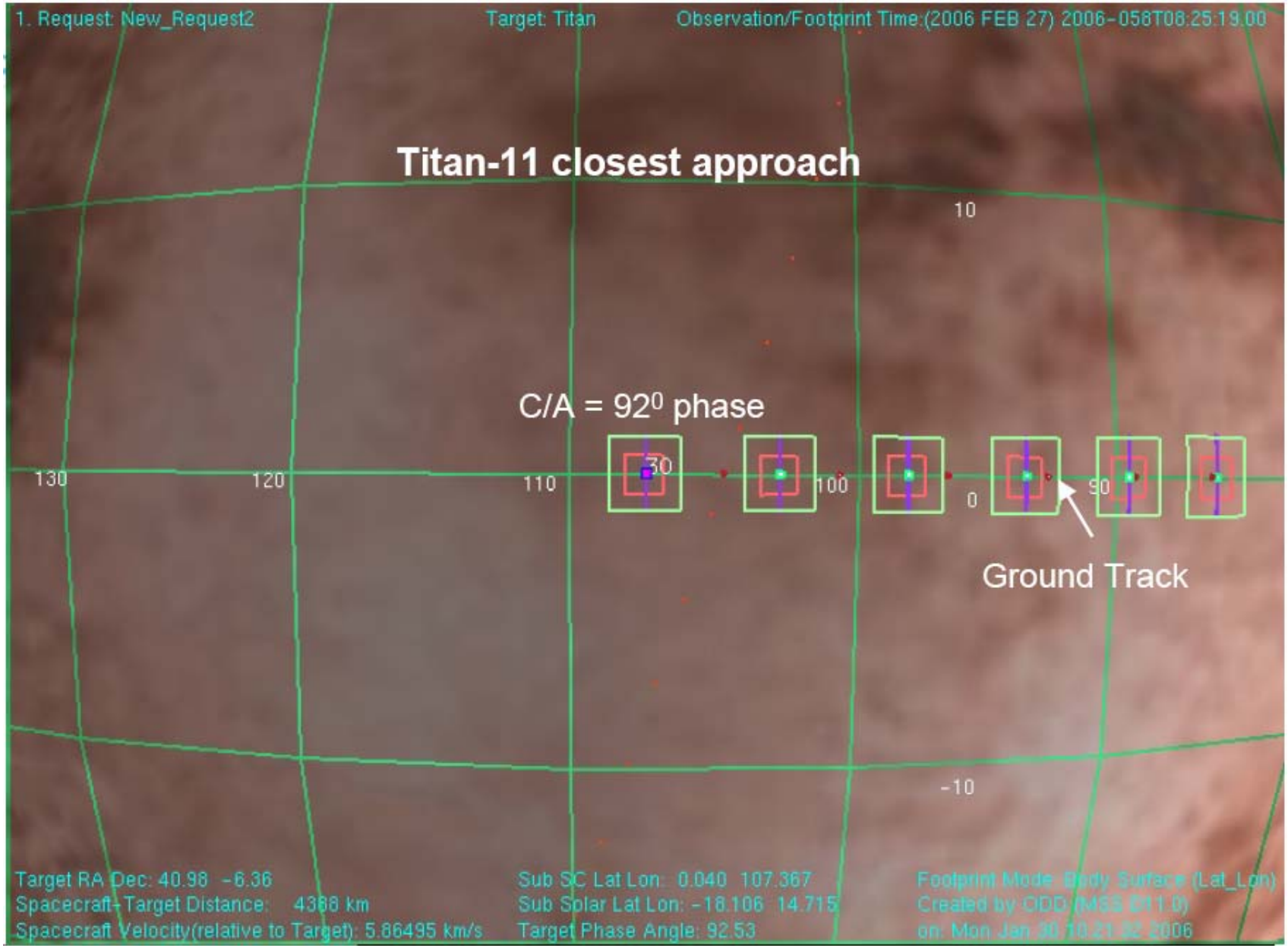
1.3 TITAN-11 SEQUENCE OF EVENTS AND SAMPLE SNAPSHOTS

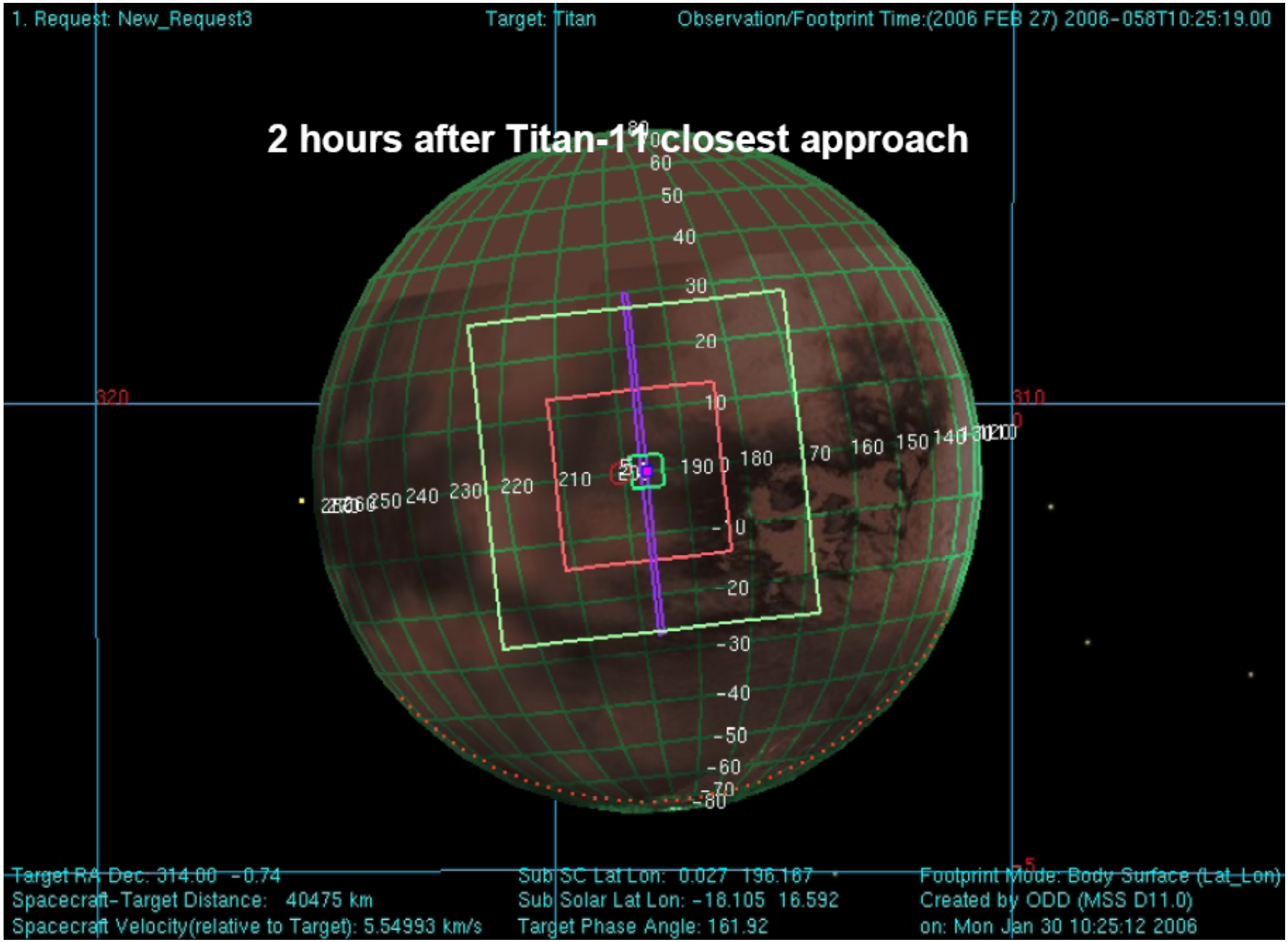
Three views of Titan from Cassini before, during, and after closest approach to Titan are shown below. The views are oriented such that the direction towards the top of the page is aligned with the Titan North Pole. Sample remote sensing instrument fields of view are drawn assuming that Cassini is pointed towards the center of Titan. The size of these fields of view vary as a function of the distance between Cassini and Titan. A key for use in identifying these instruments fields of view in the figures is listed below.

Key to Instrument Fields of View in Figures

Instrument Field of View	Depiction in Figure
ISS WAC (imaging wide angle camera)	Largest square
VIMS (visual and infrared mapping spectrometer)	Next largest pink square
ISS NAC (imaging narrow angle camera)	Smallest green square
CIRS (composite infrared spectrometer) – Focal Plane 1	Small red circle near ISS_NAC FOV
UVIS (ultraviolet imaging spectrometer)	Vertical purple rectangle centered within largest square


1. Request: New_Request1
Target: Titan
Observation/Footprint Time: (2006 FEB 27) 2006-058T06:25:19.00
2 hours before Titan-11 closest approach
20º phase
Target RA Dec: 128.07 0.08
Spacecraft-Target Distance: 40459 km
Spacecraft Velocity(relative to Target): 5.54985 km/s
Sub SC Lat Lon: -0.023 18.371
Sub Solar Lat Lon: -18.107 12.838
Target Phase Angle: 18.88
Footprint Mode: Body Surface (Lat_Lon)
Created by ODD (MSS D11.0)
on: Mon Jan 30 10:13:28 2006


1. Request: New_Request2
Target: Titan
Observation/Footprint Time:(2006 FEB 27) 2006-058T08:25:19.00
Titan-11 closest approach
10
C/A = 92⁰ phase
130
120
110
30
100
0
90
Ground Track
-10
Target RA Dec: 40.98 -6.36
Spacecraft-Target Distance: 4388 km
Spacecraft Velocity(relative to Target): 5.86495 km/s
Sub SC Lat Lon: 0.040 107.367
Sub Solar Lat Lon: -18.106 14.715
Target Phase Angle: 92.53
Footprint Mode: Body Surface (Lat_Lon)
Created by CIDD (MSS 011.0)
on: Mon Jan 30 10:21:32 2006


1. Request: New_Request3
Target: Titan
Observation/Footprint Time:(2006 FEB 27) 2006-058T10:25:19.00
2 hours after Titan-11 closest approach
Target RA Dec: 314.00 -0.74
Spacecraft-Target Distance: 40475 km
Spacecraft Velocity(relative to Target): 5.54993 km/s
Sub SC Lat Lon: 0.027 196.167
Sub Solar Lat Lon: -18.105 16.592
Target Phase Angle: 161.92
Footprint Mode: Body Surface (Lat_Lon)
Created by ODD (MSS D11.0)
on: Mon Jan 30 10:25:12 2006

1.4 Titan Timeline and Geomtery Table

Cassini Titan-11 Timeline - February 2006

Colors: yellow = maneuvers; blue = geometry; pink = T11-related; green = data playbacks

Orbiter UTC	Ground UTC	Pacific Time	Time wrt T11	Activity	Description
027T04:03:00	Jan 27 05:11	Wed Jan 26 09:11 PM	T11-31d04h	Start of Sequence S18	Start of Sequence which contains Titan-11.
055T00:26:00	Feb 24 01:34	Wed Feb 23 05:34 PM	T11-03d08h	OTM #52 Prime	Titan-11 minus 3 day targeting maneuver
055T16:05:00	Feb 24 17:13	Thu Feb 24 09:13 AM	T11-02d16h	OTM #52 Backup	
057T09:06:00	Feb 26 10:14	Sat Feb 26 02:14 AM	T11-23h19m	Start of the TOST Segment	
057T09:06:00	Feb 26 10:14	Sat Feb 26 02:14 AM	T11-23h19m	Turn cameras to Titan	
057T09:36:00	Feb 26 10:44	Sat Feb 26 02:44 AM	T11-22h49m	Deadtime	19 minutes long; used to accommodate changes in flyby time
057T09:55:19	Feb 26 11:03	Sat Feb 26 03:03 AM	T11-22h30m	Titan Global Map	Several slow wcans across Titan's visible hemisphere to form spectral images
058T01:25:19	Feb 27 02:33	Sat Feb 26 06:33 PM	T11-07h00m	Turn to Earth-Line	
058T01:55:19	Feb 27 03:03	Sat Feb 26 07:03 PM	T11-06h30m	RSS Gravity Pass	This is an inbound RSS Titan gravity pass.
058T01:55:19	Feb 27 03:03	Sat Feb 26 07:03 PM	T11-06h30m	Begin Playback of T11 Data	Goldstone 34M
058T03:55:19	Feb 27 05:03	Sat Feb 26 09:03 PM	T11-04h30m	End Playback of T11 Data	
058T03:55:19	Feb 27 05:03	Sat Feb 26 09:03 PM	T11-04h30m	Turn cameras to Titan	
058T04:25:19	Feb 27 05:33	Sat Feb 26 09:33 PM	T11-04h00m	Titan surface observations	Examine Titan's specular point
058T06:55:19	Feb 27 08:03	Sun Feb 27 12:03 AM	T11-01h30m	Turn to Earth-Line	
058T07:25:19	Feb 27 08:33	Sun Feb 27 12:33 AM	T11-01h00m	RSS Gravity Pass	This is an inbound RSS Titan gravity pass.
058T07:25:19	Feb 27 08:33	Sun Feb 27 12:33 AM	T11-01h00m	Begin Playback of T11 Data	Goldstone 34M
058T08:25:19	**Feb 27 09:33**	**Sun Feb 27 01:33 AM**	**T11+00h00m**	**Titan-11 Flyby Closest Approach Time**	**Altitude = 1813 km (1,126 miles), speed = 5.9 km/s (13,198 mph); low phase inbound, 92 deg phase at closest approach, high phase outbound**
058T12:55:19	Feb 27 14:03	Sun Feb 27 06:03 AM	T11+04h30m	End Playback of T11 Data	
058T12:55:19	Feb 27 14:03	Sun Feb 27 06:03 AM	T11+04h30m	Turn cameras to Titan	
058T13:25:19	Feb 27 14:33	Sun Feb 27 06:33 AM	T11+05h00m	Titan surface observations	Several slow wcans across Titan's visible hemisphere to form spectral images
058T16:55:19	Feb 27 18:03	Sun Feb 27 10:03 AM	T11+08h30m	Titan atmospheric observations	Examine trace constituents in Titan's stratosphere.
058T21:35:19	Feb 27 22:43	Sun Feb 27 02:43 PM	T11+13h10m	Deadtime	15 minutes long; used to accommodate changes in flyby time
058T21:51:00	Feb 27 22:59	Sun Feb 27 02:59 PM	T11+13h26m	Turn to Earth-Line	
058T22:21:00	Feb 27 23:29	Sun Feb 27 03:29 PM	T11+13h56m	Begin Playback of T11 Data	Goldstone 70M
059T08:51:00	Feb 28 09:59	Mon Feb 28 01:59 AM	T11+01d00h	End Playback of T11 Data	
068T03:34:31	Mar 09 04:42	Tue Mar 08 08:42 PM	T11+09d19h	Saturn Apoapse	Per = 23.3 d, inc = 0.4 deg, r = 48.4 Rs, phase = 122 deg

OWLT (mins)	68.8
C/A Time	Sun Feb 27 01:33 AM

B. Titan-11 Geomtery Table

Event Name: T11_21TI, Targeted Titan, Outbound. 050505 SPK: Table Creation Date (YYMMDD) 050712

Event Name at Event Time Only	SCET Date (YYYY-DOYTHH:MM:SS.FF) UTC	SCET Date (MM/DD/YYYY HH:MM:SS) UTC	SCET Date (MM/DD/YYYY HH:MM:SS) ET	Hours wrt Event Epoch	Minutes wrt Event Epoch	S/C Range (km)	S/C Altitude wrt Tri-axial Ellipsoid (km)	S/C North Latitude (deg)	S/C West Longitude SMEQPM Date (deg)	S/C Inertial Velocity (km/s)	S/C Radial Inertial Velocity (km/s)	S/C Tangential Inertial Velocity (km/s)	Central Body Angular Diameter (mrad)	Phase = Sun-Central_Body-S/C Angle (deg)	Sun-S/C-Central_Body Angle (deg)	S/C Local True Solar Time wrt Central Body (hh:mm)	Sub-solar Latitude wrt Central Body (deg)	Sub-solar West Longitude wrt Central Body SMEQPM Date (deg)
	2006-057T08:25:19.80	26-Feb-06	08:26:24	-24	-1440	509,201.7	506,625.7	0.0	-8.9	6.845	-6.844	0.030	10.1	18.1	161.9	12.04	-18.1	-7.8
	2006-057T12:25:19.80	26-Feb-06	12:26:24	-20	-1200	414,608.1	412,033.1	0.0	-5.0	6.327	-6.326	0.109	12.4	18.1	161.9	12.03	-18.1	-4.1
	2006-057T14:25:19.80	26-Feb-06	14:26:24	-18	-1080	369,784.8	367,209.8	0.0	-3.0	6.133	-6.132	0.126	13.9	18.1	161.9	12.03	-18.1	-2.2
	2006-057T16:25:19.80	26-Feb-06	16:26:24	-16	-960	326,227.8	323,652.8	0.0	-1.0	5.975	-5.973	0.136	15.8	18.1	161.9	12.02	-18.1	-0.3
	2006-057T18:25:19.80	26-Feb-06	18:26:24	-14	-840	283,700.6	281,125.6	0.0	1.1	5.847	-5.845	0.143	18.2	18.1	161.9	12.01	-18.1	1.6
	2006-057T20:25:19.80	26-Feb-06	20:26:24	-12	-720	241,999.1	239,424.1	0.0	3.2	5.745	-5.743	0.150	21.3	18.1	161.9	12.00	-18.1	3.5
	2006-057T22:25:19.80	26-Feb-06	22:26:24	-10	-600	200,946.7	198,371.7	0.0	5.4	5.666	-5.664	0.162	25.6	18.1	161.9	11.59	-18.1	5.3
	2006-058T00:25:19.80	27-Feb-06	00:26:24	-8	-480	160,390.0	157,815.0	0.0	7.7	5.606	-5.605	0.184	32.1	18.1	161.9	11.58	-18.1	7.2
	2006-058T02:25:19.80	27-Feb-06	02:26:24	-6	-360	120,195.0	117,620.0	0.0	10.2	5.566	-5.563	0.229	42.9	18.1	161.9	11.55	-18.1	9.1
	2006-058T03:25:19.80	27-Feb-06	03:26:24	-5	-300	100,196.1	97,621.1	0.0	11.6	5.554	-5.548	0.268	51.4	18.1	161.9	11.53	-18.1	10.0
	2006-058T04:25:19.80	27-Feb-06	04:26:24	-4	-240	80,245.6	77,670.6	0.0	13.2	5.546	-5.536	0.328	64.2	18.2	161.8	11.51	-18.1	11.0
	2006-058T05:25:19.80	27-Feb-06	05:26:24	-3	-180	60,333.5	57,758.5	0.0	15.2	5.543	-5.526	0.431	85.4	18.4	161.6	11.46	-18.1	11.9
	2006-058T06:25:19.80	27-Feb-06	06:26:24	-2	-120	40,459.5	37,884.5	0.0	18.4	5.550	-5.513	0.638	127.4	18.9	161.1	11.37	-18.1	12.8
	2006-058T07:25:19.80	27-Feb-06	07:26:24	-1	-60	20,692.6	18,117.6	0.0	25.7	5.584	-5.444	1.244	249.5	21.5	158.5	11.12	-18.1	13.8
	2006-058T07:55:19.80	27-Feb-06	07:56:24	-1	-30	11,071.9	8,496.9	0.0	37.8	5.651	-5.150	2.325	469.4	29.4	150.6	10.25	-18.1	14.2
	2006-058T08:10:19.80	27-Feb-06	08:11:24	0	-15	6,727.9	4,152.9	0.0	56.1	5.742	-4.283	3.825	785.5	44.7	135.3	09.13	-18.1	14.5
	2006-058T08:20:19.80	27-Feb-06	08:21:24	0	-5	4,706.0	2,131.0	0.0	85.4	5.841	-2.053	5.469	1158.0	71.7	108.3	07.17	-18.1	14.6
T11_21TI	**2006-058T08:25:19.80**	**27-Feb-06**	**08:26:24**	**0**	**0**	**4,388.1**	**1,813.1**	**0.0**	**107.4**	**5.865**	**0.007**	**5.865**	**1254.2**	**92.5**	**87.5**	**05.49**	**-18.1**	**14.7**
	2006-058T08:30:19.80	27-Feb-06	08:31:24	0	5	4,710.0	2,135.0	0.0	129.3	5.841	2.064	5.464	1156.9	113.3	66.7	04.21	-18.1	14.8
	2006-058T08:40:19.80	27-Feb-06	08:41:24	0	15	6,736.4	4,161.4	0.0	158.5	5.742	4.267	3.821	784.5	139.9	40.1	02.25	-18.1	14.9
	2006-058T08:55:19.80	27-Feb-06	08:56:24	1	30	11,082.4	8,507.4	0.0	176.8	5.651	5.151	2.322	469.0	154.4	25.6	01.13	-18.1	15.2
	2006-058T09:25:19.80	27-Feb-06	09:26:24	1	60	20,704.5	18,129.5	0.0	-171.1	5.585	5.445	1.243	249.4	160.7	19.3	00.27	-18.1	15.7
	2006-058T10:25:19.80	27-Feb-06	10:26:24	2	120	40,473.8	37,898.8	0.0	-163.8	5.550	5.514	0.635	127.3	161.9	18.1	00.01	-18.1	16.6
	2006-058T11:25:19.80	27-Feb-06	11:26:24	3	180	60,348.0	57,773.0	0.0	-160.7	5.542	5.526	0.423	85.4	161.8	18.2	23.53	-18.1	17.5
	2006-058T12:25:19.80	27-Feb-06	12:26:24	4	240	80,253.9	77,678.9	0.0	-158.7	5.542	5.533	0.314	64.2	161.7	18.3	23.48	-18.1	18.5
	2006-058T13:25:19.80	27-Feb-06	13:26:24	5	300	100,186.4	97,611.4	0.0	-157.1	5.546	5.541	0.246	51.4	161.6	18.4	23.46	-18.1	19.4
	2006-058T14:25:19.80	27-Feb-06	14:26:24	6	360	120,148.6	117,573.6	0.0	-155.8	5.553	5.550	0.198	42.9	161.5	18.5	23.44	-18.1	20.3
	2006-058T16:25:19.80	27-Feb-06	16:26:24	8	480	160,180.7	157,605.7	0.0	-153.4	5.573	5.571	0.131	32.2	161.4	18.6	23.42	-18.1	22.2
	2006-058T18:25:19.80	27-Feb-06	18:26:24	10	600	200,385.9	197,810.9	0.0	-151.3	5.598	5.598	0.081	25.7	161.4	18.6	23.41	-18.1	24.1
	2006-058T20:25:19.80	27-Feb-06	20:26:24	12	720	240,794.8	238,219.8	0.0	-149.3	5.628	5.628	0.039	21.4	161.3	18.7	23.41	-18.1	26.0
	2006-058T22:25:19.80	27-Feb-06	22:26:24	14	840	281,432.4	278,857.4	0.0	-147.4	5.661	5.661	0.001	18.3	161.3	18.7	23.40	-18.1	27.8
	2006-059T00:25:19.80	28-Feb-06	00:26:24	16	960	322,319.1	319,744.1	0.0	-145.5	5.697	5.697	0.041	16.0	161.3	18.7	23.40	-18.1	29.7
	2006-059T02:25:19.80	28-Feb-06	02:26:24	18	1080	363,471.1	360,896.1	0.0	-143.7	5.735	5.735	0.082	14.2	161.3	18.6	23.41	-18.1	31.6
	2006-059T04:25:19.80	28-Feb-06	04:26:24	20	1200	404,901.2	402,326.2	0.0	-141.9	5.775	5.774	0.124	12.7	161.4	18.6	23.41	-18.1	33.5
	2006-059T06:25:19.80	28-Feb-06	06:26:24	24	1440	486,630.9	486,055.9	0.0	-138.5	5.860	5.856	0.214	10.5	161.4	18.6	23.42	-18.1	37.2

021TI (T11) Playback Timeline

Created Feb. 2, 2006

Event or Observation	Observation Type (APGEN)	Observation Record Start Time (yyyy-dddThh:mm:ss) (SCET)	Record Start Time - Reference Epoch	Start Playback (Ground UTC)		Start Playback (Pacific Time)	
				Best Estimate	Latest Estimate	Best Estimate	Latest Estimate
MAG_021OT_SURVEY011_RIDER	MAG_1976	2006-057T09:06:00	-00T23:19	27-Feb Mon 03:09 A	Mon 03:09 AM	26-Feb Sun 07:09 PI	Sun 07:09 PM
RPWS_021SA_INSURVEY001_PRIM	RPWS_30464	2006-057T09:06:00	-00T23:19	27-Feb Mon 03:09 A	Mon 03:09 AM	26-Feb Sun 07:09 PI	Sun 07:09 PM
CIRS_021TI_FIRNADCMP003_VIMS	CIRS_4000	2006-057T09:55:19	-00T22:30	27-Feb Mon 03:18 A	Mon 03:19 AM	26-Feb Sun 07:18 PI	Sun 07:19 PM
ISS_021TI_GLOBMAP001_VIMS	ISS_Phot_1_by_1	2006-057T09:55:19	-00T22:30	27-Feb Mon 03:18 A	Mon 03:19 A	26-Feb Sun 07:18 F	Sun 07:19 PM
UVIS_021TI_MEDRES001_VIMS	UVIS_5032	2006-057T09:55:19	-00T22:30	27-Feb Mon 03:18 A	Mon 03:19 AM	26-Feb Sun 07:18 PI	Sun 07:19 PM
VIMS_021TI_GLOBMAP001_PRIME	VIMS_18432	2006-057T09:55:19	-00T22:30	27-Feb Mon 03:18 A	Mon 03:19 A	26-Feb Sun 07:18 F	Sun 07:19 PM
CDA_021DR_1300DUST152_RIDER	CDA_524	2006-057T10:03:09	-00T22:22	27-Feb Mon 03:22 A	Mon 03:25 AM	26-Feb Sun 07:22 PI	Sun 07:25 PM
CDA_021RI_1400RINGM020_RIDER	CDA_524	2006-057T13:17:30	-00T19:07	27-Feb Mon 08:41 A	Mon 11:12 AM	27-Feb Mon 12:41 A	Mon 03:12 AM
CDA_021DR_1500DUST153_RIDER	CDA_524	2006-057T15:18:30	-00T17:06	27-Feb Mon 11:36 A	Mon 11:48 PM	27-Feb Mon 03:36 A	Mon 03:48 PM
RPWS_021SA_OUTSURVEY014_PR	RPWS_30464	2006-057T15:40:00	-00T16:45	27-Feb Mon 12:08 P	Mon 11:54 PM	27-Feb Mon 04:08 A	Mon 03:54 PM
CDA_021RI_1600RINGM022_RIDER	CDA_524	2006-057T18:47:16	-00T13:38	27-Feb Mon 11:55 P	Tue 12:36 AM	27-Feb Mon 03:55 P	Mon 04:36 PM
INMS_021TI_T11INBD001_CAPS	INMS_1498	2006-057T20:41:54	-00T11:43	28-Feb Tue 12:13 A	Tue 12:58 AM	27-Feb Mon 04:13 P	Mon 04:58 PM
CDA_021DR_1700DUST154_RIDER	CDA_524	2006-057T20:48:16	-00T11:37	28-Feb Tue 12:14 A	Tue 12:59 AM	27-Feb Mon 04:14 P	Mon 04:59 PM
CIRS_021TI_FIRNAD003_ISS	CIRS_4000	2006-057T22:25:19	-00T10:00	28-Feb Tue 12:28 A	Tue 01:18 AM	27-Feb Mon 04:28 P	Mon 05:18 PM
ISS_021TI_GLOBMAPNA001_PRIM	ISS_Phot_1_by_1	2006-057T22:25:19	-00T10:00	28-Feb Tue 12:28 A	Tue 01:18 AM	27-Feb Mon 04:28 F	Mon 05:18 PM
UVIS_021TI_MONITORNA001_ISS	UVIS_5032	2006-057T22:25:19	-00T10:00	28-Feb Tue 12:28 A	Tue 01:18 AM	27-Feb Mon 04:28 P	Mon 05:18 PM
VIMS_021TI_GLOBALMAP001_ISS	VIMS_18432	2006-057T22:25:19	-00T10:00	28-Feb Tue 12:28 A	Tue 01:18 AM	27-Feb Mon 04:28 F	Mon 05:18 PM
RSS_021TI_THERMAL001_RSS	RSS_Activity	2006-057T23:25:19	-00T09:00	28-Feb Tue 12:59 A	Tue 01:59 AM	27-Feb Mon 04:59 F	Mon 05:59 PM
CDA_021RI_1800RINGM019_RIDER	CDA_524	2006-058T00:35:03	-00T07:50	28-Feb Tue 01:25 A	Tue 02:32 AM	27-Feb Mon 05:25 P	Mon 06:32 PM
RSS_021TI_GRAVITY001_PRIME	RSS_Activity	2006-058T01:25:19	-00T07:00	28-Feb Tue 01:39 A	Tue 05:53 AM	27-Feb Mon 05:39 F	Mon 09:53 PM
UVIS_021SW_IPHSURVEY031_RIDE	UVIS_5032	2006-058T01:55:19	-00T06:30	28-Feb Tue 01:40 A	Tue 02:41 AM	27-Feb Mon 05:40 P	Mon 06:41 PM
CDA_021DR_1900DUST118_RIDER	CDA_524	2006-058T02:36:03	-00T05:49	28-Feb Tue 01:42 A	Tue 02:43 AM	27-Feb Mon 05:42 P	Mon 06:43 PM
VIMS_021TI_GLOBALMAP002_ISS	VIMS_18432	2006-058T03:55:19	-00T04:30	28-Feb Tue 01:45 A	Tue 02:47 AM	27-Feb Mon 05:45 F	Mon 06:47 PM
CIRS_021TI_FIRNAD004_ISS	CIRS_4000	2006-058T04:25:19	-00T04:00	28-Feb Tue 01:46 A	Tue 02:49 AM	27-Feb Mon 05:46 P	Mon 06:49 PM
ISS_021TI_REGMAPNA001_PRIME	ISS_Phot_1_by_1	2006-058T04:25:19	-00T04:00	28-Feb Tue 01:46 A	Tue 02:49 AM	27-Feb Mon 05:46 F	Mon 06:49 PM
MAG_021TI_MAGTITAN001_PRIME	MAG_1976	2006-058T04:25:19	-00T04:00	28-Feb Tue 01:46 A	Tue 02:49 AM	27-Feb Mon 05:46 P	Mon 06:49 PM
UVIS_021TI_MONITORNA002_ISS	UVIS_5032	2006-058T04:25:19	-00T04:00	28-Feb Tue 01:46 A	Tue 02:49 AM	27-Feb Mon 05:46 P	Mon 06:49 PM
RSS_021TI_THERMAL002_RSS	RSS_Activity	2006-058T04:55:19	-00T03:30	28-Feb Tue 02:01 A	Tue 05:55 AM	27-Feb Mon 06:01 F	Mon 09:55 PM
CAPS_021TI_T11INBND001_PRIME	CAPS_16000	2006-058T06:20:44	-00T02:04	28-Feb Tue 02:42 A	Tue 06:42 AM	27-Feb Mon 06:42 P	Mon 10:42 PM
CIRS_021TI_FIRNAD005_ISS	CIRS_4000	2006-058T06:25:19	-00T02:00	28-Feb Tue 02:44 A	Tue 06:45 AM	27-Feb Mon 06:44 P	Mon 10:45 PM
MIMI_021TI_T11INBND001_CAPS	MIMI_8000	2006-058T06:25:19	-00T02:00	28-Feb Tue 02:44 A	Tue 06:45 AM	27-Feb Mon 06:44 F	Mon 10:45 PM
RPWS_021TI_TIINTRMED001_PRIME	RPWS_30464	2006-058T06:25:19	-00T02:00	28-Feb Tue 02:44 A	Tue 06:45 AM	27-Feb Mon 06:44 P	Mon 10:45 PM
RSS_021TI_GRAVITY002_PRIME	RSS_Activity	2006-058T06:55:19	-00T01:30	28-Feb Tue 03:02 A	Tue 07:05 AM	27-Feb Mon 07:02 F	Mon 11:05 PM
CAPS_021TI_T11CLOSE001_PRIME	CAPS_16000	2006-058T07:25:19	-00T01:00	28-Feb Tue 03:05 A	Tue 03:05 AM	27-Feb Mon 07:05 P	Mon 07:05 PM
INMS_021TI_T11CLOSE001_CAPS	INMS_1498	2006-058T07:25:19	-00T01:00	28-Feb Tue 03:05 A	Tue 03:05 AM	27-Feb Mon 07:05 F	Mon 07:05 PM
MIMI_021TI_T11CLOSE001_CAPS	MIMI_8000	2006-058T07:25:19	-00T01:00	28-Feb Tue 03:05 A	Tue 03:05 AM	27-Feb Mon 07:05 F	Mon 07:05 PM
RPWS_021TI_TICA001_PRIME	RPWS_182784	2006-058T07:55:19	-00T00:30	28-Feb Tue 03:12 A	Tue 03:13 AM	27-Feb Mon 07:12 P	Mon 07:13 PM
RPWS_021TI_TIINTRMED002_PRIME	RPWS_30464	2006-058T08:55:19	00T00:29	28-Feb Tue 03:59 A	Tue 04:06 AM	27-Feb Mon 07:59 P	Mon 08:06 PM
CAPS_021TI_T11OUTBND001_PRIM	CAPS_16000	2006-058T09:25:19	00T00:59	28-Feb Tue 04:06 A	Tue 04:13 AM	27-Feb Mon 08:06 P	Mon 08:13 PM
INMS_021TI_T11OUTBD001_CAPS	INMS_1498	2006-058T09:25:19	00T00:59	28-Feb Tue 04:06 A	Tue 04:13 AM	27-Feb Mon 08:06 F	Mon 08:13 PM
MIMI_021TI_T11OUTBND001_CAPS	MIMI_8000	2006-058T09:25:19	00T00:59	28-Feb Tue 04:06 A	Tue 04:13 AM	27-Feb Mon 08:06 F	Mon 08:13 PM
CAPS_021SA_SURVEY005_RIDER	CAPS_16000	2006-058T10:25:19	00T01:59	28-Feb Tue 04:15 A	Tue 04:23 AM	27-Feb Mon 08:15 P	Mon 08:23 PM
MIMI_021CO_SURVEY013_RIDER	MIMI_8000	2006-058T10:25:19	00T01:59	28-Feb Tue 04:15 A	Tue 04:23 AM	27-Feb Mon 08:15 F	Mon 08:23 PM
MAG_021OT_SURVEY017_RIDER	MAG_1976	2006-058T12:25:19	00T03:59	28-Feb Tue 04:21 A	Tue 04:29 AM	27-Feb Mon 08:21 P	Mon 08:29 PM
CIRS_021TI_FIRNADMAP003_UVIS	CIRS_4000	2006-058T13:25:19	00T04:59	28-Feb Tue 05:32 A	Tue 07:11 AM	27-Feb Mon 09:32 P	Mon 11:11 PM
ISS_021TI_EUVFUV002_UVIS	ISS_Phot_1_by_1	2006-058T13:25:19	00T04:59	28-Feb Tue 05:32 A	Tue 07:11 AM	27-Feb Mon 09:32 F	Mon 11:11 PM
UVIS_021TI_EUVFUV002_PRIME	UVIS_5032	2006-058T13:25:19	00T04:59	28-Feb Tue 05:32 A	Tue 07:11 AM	27-Feb Mon 09:32 P	Mon 11:11 PM
VIMS_021TI_THERMAL001_CIRS	VIMS_18432	2006-058T16:25:19	00T07:59	28-Feb Tue 05:49 A	Tue 07:33 AM	27-Feb Mon 09:49 F	Mon 11:33 PM
CIRS_021TI_FIRNADCMP002_PRIME	CIRS_4000	2006-058T16:55:19	00T08:29	28-Feb Tue 05:53 A	Tue 07:37 AM	27-Feb Mon 09:53 P	Mon 11:37 PM
CIRS_021TI_FIRNADCMP002_SI	ISS_SUPPORT_IMAG	2006-058T16:55:19	00T08:29	28-Feb Tue 05:53 A	Tue 07:37 AM	27-Feb Mon 09:53 P	Mon 11:37 PM
ISS_021TI_FIRNADCMP002_CIRS	ISS_Phot_1_by_1	2006-058T16:55:19	00T08:29	28-Feb Tue 05:53 A	Tue 07:37 AM	27-Feb Mon 09:53 F	Mon 11:37 PM
UVIS_021TI_FIRNADCMP002_CIRS	UVIS_5032	2006-058T16:55:19	00T08:29	28-Feb Tue 05:53 A	Tue 07:37 AM	27-Feb Mon 09:53 P	Mon 11:37 PM
RSS_021TI_KADOWN001_RSS	RSS_Activity	2006-058T20:16:00	00T11:50	28-Feb Tue 06:09 A	Tue 08:00 AM	27-Feb Mon 10:09 F	Tue 12:00 AM
INMS_021SA_SURVEY006_RIDER	INMS_1498	2006-058T20:25:19	00T11:59	28-Feb Tue 06:10 A	Tue 08:01 AM	27-Feb Mon 10:10 F	Tue 12:01 AM
CDA_021HY_2400HYORX019_RIDEF	CDA_524	2006-058T20:32:23	00T12:07	28-Feb Tue 06:11 A	Tue 08:02 AM	27-Feb Mon 10:11 P	Tue 12:02 AM
CDA_021DR_2500DUST119_RIDER	CDA_524	2006-058T22:33:23	00T14:08	28-Feb Tue 06:17 A	Tue 08:11 AM	27-Feb Mon 10:17 P	Tue 12:11 AM
CIRS_021IC_DSCAL1324_RIDER	CIRS_4000	2006-058T23:06:00	00T14:40	28-Feb Tue 06:19 A	Tue 08:12 AM	27-Feb Mon 10:19 P	Tue 12:12 AM
CAPS_021CO_BURST16K026_RIDE	CAPS_16000	2006-058T23:30:00	00T15:04	28-Feb Tue 06:20 A	Tue 08:14 AM	27-Feb Mon 10:20 P	Tue 12:14 AM
RPWS_021CO_HIRATE011_CAPS	RPWS_30464	2006-059T00:00:00	00T15:34	28-Feb Tue 06:25 A	Tue 08:19 AM	27-Feb Mon 10:25 P	Tue 12:19 AM